From:	Winiecki, Eric
To:	"Freeman, Kevin"
Cc:	Fuentes, Rene; MacDonald, Jennifer
Subject:	Summary of August 13, 2013 Meeting Regarding Draft IWM Plans
Date:	Friday, August 16, 2013 10:44:00 AM

Kevin,

Based on our 8/13 conference call regarding the draft Irrigation Water Management (IWM) Plan, here is my understanding of what transpired on the call, and what EPA expects to see in the next version of the plan outline.

- EPA expressed concern that the current IWM plan does not meet a key requirement of the AOC --- that the plan is to include "…the installation of electronic sensors at the bottom of the root zone in each application field to provide for automatic shut off of the irrigation system to minimize water movement below the root zone."

- As noted in the first bullet, the AOC language clearly envisions that there will be at least two sensors in each field.

- The IWM plan must clearly state the singular goal of the plan which is to minimize water movement below the root zone. All other objectives currently described in the objectives section of the draft plan must be moved to a separate section entitled "other considerations," "sub-objectives," or similar title.

- The plan must be laid out in accordance with EPA's guidance on QAPPs, with data quality objectives that are designed to achieve the stated goal.

- There must be a clear, thorough, and detailed explanation of your method ("Scientific Irrigation Scheduling") and the logic behind it so that everyone can understand what is planned.

- The general management approach described in the draft plan is that instead of having sensors triggering an automatic irrigation pump shut-off, sensor and weather data would be used to accurately order quantities of irrigation water for the coming week, based on crop need and existing soil saturation levels, and the sensors would be used to verify that water reaching the bottom of the root zone is minimized.

- There must be a clear description of how water is presently ordered and delivered from the Irrigation Districts of Roza and Sunnyside Canals, and the difficulty involved in automatically shutting off the flow of water, so that the logic behind the proposed changes can be documented.

- EPA is amenable to exploring the possibility that the general approach described in the draft plan could achieve the goal if it were more robust. However, it must be more robust. And, if it turns out to be ineffective in the field, the fallback will be to revert back to the stated requirement in the AOC which provides for "…the installation of electronic sensors at the bottom of the root zone in each application field to provide for automatic shut off of the irrigation system to minimize water movement below the root zone."

- One sensor location, even if it has multiple measurement depths, for each field is not adequate, unless the field is very small and uniform – i.e., has uniform soil type, the same crop is grown throughout, is very flat, the irrigation system has been shown to deliver water uniformly, etc.

- The IWM Plan must deal with variability expected within the fields.

- Sensors locations must include those in each field that are most vulnerable to leaching… e.g., the lowest point of the most permeable soil type area, at the bottom of swales, at the bottom of any depression where water could pool.

- Unless an assessment is done of each irrigation system in each field to evaluate for uniform water application, sensors must be located in different parts of the field along the apparatus to ensure that uneven application is not causing localized problems (e.g., along a radius line of a center pivot field).

- Any large field (e.g., a center pivot) must have several sensors even if it is fairly uniform, to provide the confidence of having several data points.

- Written justification for each proposed sensor location must be provided.

- The IWM plan needs to clearly describe how data will be used to evaluate whether the goal of the Plan is being achieved from week to week.

- The plan must clearly state that the weekly irrigation amount recommendation of the ag consultant will be implemented (i.e., it's not just a recommendation, it's the plan of action).

- No later than August 30, Respondents will submit an outline for a revised IWM Plan that addresses these concerns. EPA will comment on the outline before a more detailed revised plan is prepared.

- The outline will accompany revised figures showing proposed sensor locations in each field.

Also, although not discussed at the meeting, the plan needs to describe how the IWM Plan will be applied to the rill (i.e., flood) irrigated fields before and after they are converted to an alternative type of irrigation as required in the Consent Order.
If you have any questions or concerns, please call me.
Eric